

REMARKS

This responds to the Office Action mailed on July 25, 2006. Reconsideration is respectfully requested.

Claims 1 – 3, 8 – 10, 12 – 17 are amended, claims 7, 11 and 21 – 23 are canceled, and claims none are added; as a result, claims 1 – 6, 8 – 10 and 12 – 20 are now pending in this application.

§103 Rejection of the Claims

Claims 1-10, 12-18 and 20-22 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Jiang (EP 0907237) and Giannopoulos (U.S. 6,504,267). Claim 19 was rejected under 35 USC § 103(a) as being unpatentable over Jiang and Giannopolous as applied to claims 12 and 16-17 above, and further in view of Harding et al. (2002/0037796).

Independent claims, as amended, recites that steering diodes in series with switching elements of the first-side stage coupling the switching elements of the first-side stage to switching elements of the second-side stages to allow forward bias current to flow from the switching elements of the first-side stage to the switching elements of the second-side stages. The steering diodes also inhibit current from flowing between the switching elements of the second-side stages in a reverse bias direction when a switching element of one of the second-side stages is turned off before a switching element of one of the other second-side stages. The forward and reverse bias current of the steering diodes further defines the diode's position in the circuit and is discussed in more detail below.

Independent claim 1, as amended, further recites that the switching signal generator comprises a plurality of sets of transforming windings, and that switching signals for switching on and off each of the switching elements of the first-side stage are each provided by separate windings of the sets of transforming windings. Independent claim 1, as amended, also recites that center tap windings of the sets of transforming windings provides a switching signal for switching on and off one of the switching elements of the second-side stage.

Independent claim 12 has similar recitations to independent claim 1. Dependent claims 2 and 13, as amended, further recite that the center tap windings further provide power to driver elements of the second-side driver circuits. Support for these amendments to the claims may be found throughout Applicants' specification, for example, on page 6, lines 15 – 23, among other places.

Applicants submit that the separate sets of transformer windings for providing separate switching signals is not taught, suggested or motivated by any of the cited reference, either separately or in combination. Applicants further submit that the center tap windings for providing switching signals is also not taught, suggested or motivated by any of the cited reference, either separately or in combination. Applicants further submit that the center tap windings for providing power to driver elements is not taught, suggested or motivated by any of the cited reference, either separately or in combination.

Claim 8 has been amended to recite that a freewheeling diode associated with each switching element of the first-side stage and coupling the input side of each of the transformers to the input of the first-side stage to allow inductive leakage current to flow from the transformers when the associated switching element is turned off. Claim 8 further recites that the steering diodes and an associated one of the switching elements of the first-side stage are coupled in series, and that the freewheeling diodes are coupled in parallel to the series coupling of the steering diodes and associated switching elements of the first-side stage. Claim 14 has similar recitations.

According to the Examiner, the modification of Giannopoulos' steering diodes into Jiang's invention is structurally equivalent to the claimed freewheeling diodes coupled between the first-side stage switching elements and the input of the transformer and is therefore capable of performing the intended use. Applicants submit that claims 8 and 14, as amended, clarify that the freewheeling diodes are separate elements from the steering diodes because they are coupled to different structural elements. Furthermore, the freewheeling diodes allow leakage current to flow from the transformer to the input, which is the same direction of current that the steering diodes inhibit (i.e., away from the transformer). Therefore, including Giannopoulos' steering diodes into Jiang's invention *cannot be* structurally equivalent to the claimed freewheeling diodes.

Examples of Applicants' freewheeling diodes are illustrated as elements 232, 234, 242 and 244 in FIG. 2, and examples of Applicants' steering diodes are illustrated as elements 236, 238, 246 and 248 in FIG. 2. As shown, the steering diodes are in series with first-side stage switching elements 210 and 212, and the freewheeling diodes are in parallel to the series combination of the steering diodes and the first-side stage switching elements. As recited in claims 1 and 12, this configuration allows forward bias current to flow through the steering diodes while inhibiting reverse bias current from flowing between the stages. This configuration is not taught, suggested or motivated by the combination of the cited references.

AMENDMENT AND RESPONSE UNDER 37 CFR § 1.116 – EXPEDITED PROCEDURE

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Title: REDUCED COMPONENT POWER CONVERTER WITH INDEPENDENT REGULATED OUTPUTS AND METHOD

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CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicants' attorney (480) 659-3314 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

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By /


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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being filed using the USPTO's electronic filing system EFS-Web, and is addressed to: Mail Stop AF, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 14 day of September 2006.

Kimberly Brown

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Signature